COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

RESPONSE OF BAY STATE GAS COMPANY TO THE
FIRST SET OF INFORMATION REQUESTS FROM D.T.E.
D.T.E. 02-75

Date: April 2, 2003

Witness Responsible: William Gresham

DTE 1-10: Please refer to the econometric models presented in the Schedule BSG-III-2 and pages 23 and 24 of the Company's filing. In this regard, please:

(a) indicate the computer software used to estimate these equations. What version?
(b) indicate the criterium(a) (e.g., level of statistical significance of the estimates) selected by the Company to determine whether or not an independent variable has explanatory power;
(c) state the method(s) used by the Company to estimate each model;
(d) state the underlying assumptions of the method(s) used by the Company to estimate the equations, and explain how the Company tested these assumptions to ensure that none of them is violated. Provide evidence to support you answer;
(e) indicate the unit of measurement of every single dependent and independent variable used by the Company in the estimation of models.

RESPONSE: (a) The SAS System for Windows version 8.01.

(b) As a general rule, t-statistics of 2 or more are considered significant. This implies, roughly, a 5% or greater level of significance

(c) The models in BSG-III-2 are estimated using ordinary least squares.

(d) The OLS model assumes that (2) the dependent variable can be calculated as a linear function of a set of independent variables plus a disturbance term; (2) that the expected value of the disturbance term is zero; (3) that the disturbance terms all have the same variance and are not correlated (no heteroskedasticity or autocorrelation); (4) that the values of the independent variables are considered fixed in repeated samples; (5) that the number of observations is greater than the number of independent variables and that there are no exact linear relationships between the independent variables (no perfect multicollinearity).

Please see the regression output from DTE 1-16. Because of the nature of the data (time series) the assumption of uncorrelated disturbance terms receives most of the diagnostic attention. The Durbin-Watson statistic was examined as a check for first order serial correlation. The models were then corrected for this serial correlation. The assumption of a linear specification is not unreasonable, although the Company did not examine other functional forms for this filing. Heteroskedasticity is assumed to be a greater issue in cross-sectional data and specific tests were not made for heteroskedasticity in this filing. Formal methods are not used to detect multicollinearity given the small number of independent variables.

(e) The dependent variables are (1) use per quarter, (2) use per meter per quarter, and (3) number of active meters. Use per quarter and use per meter per quarter are in dekatherms (MMbtu). Meters are an average value of the monthly meter counts in the quarter. The independent variables are (1) gross metropolitan product, (2) number of households, and (3) effective degree days. The Gross metropolitan product are in billions of dollars. Number of households are in thousands. Quarterly effective degree days are the sum of daily edds and are calculated considering wind speed and degree days based on a 65 degree balance point.